

Dated March 1828

An  
Inaugural Essay  
on  
Pertussis,  
for  
The degree of M. D.  
In

The University of Pennsylvania:

By  
William M. Fenimore

of  
New Jersey.

Jan<sup>y</sup> 5<sup>th</sup> 1828.

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perhaps, or whooping cough, which I have selected for the subject of this dissertation, is a disease, which is, almost exclusively, confined to the ages of infancy, and childhood; and, which, having once surmounted its course, commonly, exonerates the system, from the liability to a second attack: yet, numerous instances are recorded, as well, of its having attacked persons at an advanced period of life, as, of its having occurred repeatedly in the same individuals.

An attack of this disease is, usually, attended with the ordinary symptoms of catarrh — There is a sense of lassitude, & weakness, with pain in the head; some degree of hoarseness; dry cough; frequent sneezing, with a discharge of thin mucus from the nostrils; loss of appetite, and, commonly, more or less febrile excitement: — These symptoms, frequently, continue for many days, before the disease appears in its usual form. And, it has, even, been said by Cullen, that, "he has known instances of a disease, which, though evidently arising from the chicken cough contagion, never put on any other form, than that of common catarrh." But this does not often happen, and, more generally,



in the course of two or three weeks, the disease takes on its characteristic symptoms, particularly, the paroxysms of convulsive coughing.

A paroxysm consists in a number of short convulsive expirations, following each other in rapid succession, and, which are sometimes continued, until the patient becomes nearly exhausted, and is, apparently, on the point of suffocation, when the lungs are filled, by a violent inspiration, which is attended by that peculiar noise, called, a whoop; (from whence, the disease has received the popular appellation of whooping-cough.) — The convulsive expirations are now renewed, and, again, terminated in the same manner, by the forcible inspiration; and, in this way, the paroxysm continues, until, there is a discharge of phlegm or mucus, from the lungs, or, until the contents of the stomach are ejected by vomiting; after which, with the exception, of some degree of temporary exhaustion, and uneasiness of the chest, the child, in common, remains cheerful and lively, and, apparently, free from disease, until the coming on of the next paroxysm, when, as, again, presented the same phenomena as above described.



After the termination of the paroxysm, the patient has, commonly, a strong desire for food, and more especially, if the stomach has been evacuated by vomiting.

During a paroxysm, the blood, from its interrupted circulation thro' the lungs, is, sometimes, forced to the head with such violence, that, hemorrhage from the nose, can't not unfrequently take place; the lips and eyelids swell; the eyes appear ready to start from their sockets; the countenance becomes of a livid hue, and these are all the symptoms of immediate strangulation:

A sense of dizziness, also, arises from the same cause, and the sufferer, from a consciousness of this, at the commencement of a paroxysm, clings to the nearest object for support, or throws himself on his hands and knees, and in this position remains, untill its violence has abated.

At other times, the effects of the fit are much milder, and during its continuation, the child experiences little inconvenience.

The fits of coughing occur with various degrees of frequency; sometimes, in mild cases, not happening, oftener, than five or six times, in the course of twenty-four hours; while, in more vio-

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last attacks, they may occur every half hour, especially during the night, when, they are always more frequent, as well as, more severe.

Pertussis, being once confirmed, frequently continues, if left to itself, for three or four months, and sometimes, this rarely for over ten or twelve months; but, when judiciously treated, its course may be considerably abbreviated. Much, however, will depend on the season of the year in which it occurs, both as relates to its duration, and the severity of its symptoms, an attack being always more violent, and its course more protracted during winter.

As to the origin of pertussis, there is not a little difference of opinion: many firmly believing in its contagious nature, while others, entirely, deny its propagation in that manner, and ascribe its production altogether to atmospherical influences; and, from its frequent prevalence as an epidemic, together, with the knowledge of its having, occasionally, broken out in situations where there had been no intercourse with an infected source, the advocates of its non-contagious nature appear to be entitled

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It is then left a matter of sentiment among those who have written on this disease, well except to the pathological view, progressing, as well, in the organ in which they consider the disease to be primarily seated, as to the nature of its original cause. The former are now inclined to deem that the brain was the original seat of the disorder, while others have stated it to be the abdominal canal. The latter seems not to anticipate in the second merely, from sympathy: Some are inclined to be to entirely of a spasmodic nature, while others have described its phenomena as being essentially the effects of inflammation. But the action which at present is pretty generally admitted and which appears the most rational is that perhaps as a primary affection of the organ of respiration in other organs collapse that may become induced during the course of the disease to as either from sympathetic influence, or from the effects of mechanical obstruction during the progress. — The remote cause, nature may be its nature, is applied to the mucous membrane

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which time the trachea and bronchia; receive a greater or  
less degree of irritation, strongly tending to and frequently  
terminating into inflammation; it is a consequence of the irri-  
tation of the serous membrane the fluids become inflamed  
and increased in quantity; and for this reason when  
copiously accumulated, the paroxysms of coughing as above  
described are called into action. Coughs arising from  
irritation are excited by various causes as the irritation of dust  
matter inhaled with the breath, irritant exhalations from the  
larynx &c. Concerning the diagnosis, we must now to assist. The pecu-  
liar character of the cough coincides with the more general  
manner in which an attack of pertussis makes its appearance,  
with its frequent recurrence to interrupt at times the operation  
of the respiratory system, its spasmodic action, its duration more  
or less protracted &c. There is however a disease to which per-  
tussis in its first stage, bears a strong resemblance that,  
frequency of its paroxysms our attention is drawn to the existing  
affection, it will be found no easy matter to distinguish the one  
from the other. It is liable to be affected of various kinds

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our cord. There is reason in the latter comment, and  
 such treatment and the patient is left exposed to some  
 loss in subsequent cough. But, the restriction, I imagine, will  
 must in our knowledge of the prevailing disease. — For, if a  
 child be attacked with catarrhal symptoms during the pre-  
 valence of whooping cough as an epidemic it will generally  
 be found that these are merely the forerunners of other symp-  
 toms of a character so peculiar as to leave no doubt in the  
 subject. And, under these circumstances, we will most com-  
 monly, be correct in deciding the disease to be an attack of  
 the prevailing epidemic, and, should we see the wrong in  
 our judgment, little importance need be attached to the  
 mistake, as, at this period, the treatment to be pursued,  
 is generally similar in either case.

I agree, with you, in your estimate that an attack  
 of this disease will terminate it will be necessary to take  
 into consideration the end is left at once to be seen.  
 The nature of the attack is to be made in the patient's  
 condition.

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is to be that of life as when we stars take place. The  
it is "to be as we are, as they are in the  
greater or less in the same way. It is a  
I have found, that in some cases, the  
age than when it is: and the older children are, they are  
the more secure against an unhappy event, and this  
has to be a very general rule, that, "the more we are  
the more it is." But, on the other hand, it is affirmed  
by Dr. Gregory, that, "the danger is not proportioned to the  
age of the child for, one of two or three months old, will  
struggle through the disease, as well as another, of two  
or three years." The latter opinion is, perhaps, not  
founded on accurate observation, as it is generally found  
that a very tender age is unfavourable. Principally, from  
the inability of infants to obtain relief by expectoration  
and consequently, unless the mucus is expelled from the  
lungs by the action of vomiting they are sometimes, in  
danger of being suffocated by it; and hence arises the  
greater ability of mothers, in their management.

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The principal symptoms that denote a severe and dangerous disease, are much febrile excitement, great difficulty of breathing, and violent and frequent paroxysms of coughing, attended with scanty expectoration: copious expectoration in very young infants, is likewise unfavourable. Hemorrhage from the nose, are generally, insidious, from the debility this occasion: The superintention, or attack of fevers, or other inflammatory disease, is also, insidious, and frequently, fatal,

The state of the patient's constitution is likewise, to be taken into consideration in forming a prognosis. It will be unfavourable, if the attack occurs in those who have been debilitated by some previous disease, as cholera infantum diarrhoea &c.

The irritations, produced by dentition well, likewise have an unfavourable effect on the disease.

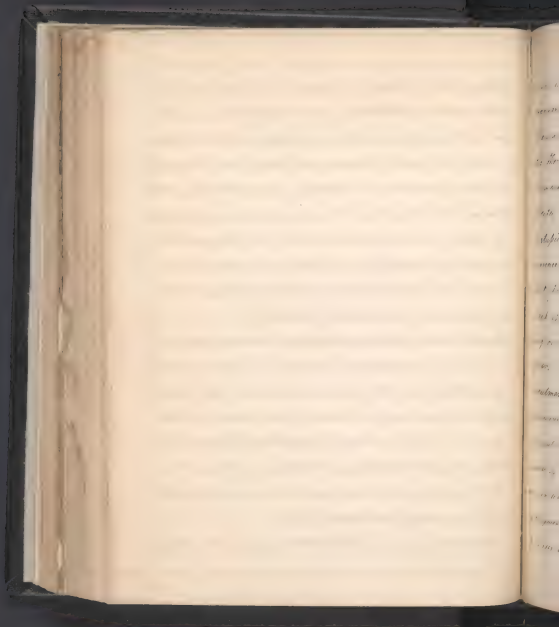
Children who inherit from their parents, predispositions to particular affections, as ~~pleurisy~~ pleurisy, salmonella, asthma, &c. are more disposed to a fatal termination, and, are

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indeed seldom known to recover. But when peripneumonia occurs to children of sound constitution, when no inflammatory affection supervenes, when the paroxysms are neither frequent, nor violent and terminate in free expectoration, or vomiting, and when the patient, during the intermissions, has a desire for food a disposition to sleep and is neither troubled with fever, nor difficulty of breathing, the case may, commonly, be considered, as without danger, and we will be justifiable in delivering a favorable prognosis.

Pneumonia when, at last, may terminate in various ways. Life may be instantaneously destroyed during the paroxysm, by suffocation or, the patient may be carried off by exhaustion wrought on by the violent shock received by the system; or, the free transmission of blood through the lungs, being interrupted, the consequent increased determination to the vessels of the brain may produce an attack of apoplexy, immediate destruction of life.

Pneumonia may be met in other diseases which may



now, ultimately, fatal. It must be a much more gradual process: Thus from the extension of inflammation to the pueral brain effusion may be produced constituting hydrothorax, or, in leucæ crachnoidea may take on an increasing action, constituting an hydrocephalus internus. Scarcely, however, is said sometimes, to follow an attack of whooping cough. When fatal it is not an uncommon occurrence especially, in those who are predisposed to it, but, perhaps the most common manner in which, an attack of whooping cough, proves fatal to life, is by gradually wearing on the strength of the patient, by marasmus, or hectic fever.

**Treatment.** It is very probable that in the worst cases, given by nature to meet the various case is subject, there is not one great remedy that, in general is supposed to have a pre-eminent power of treatment, than whooping cough. It is perhaps in those cases, in which more benefit may, occasionally, be derived from the employment of appropriate remedies.

In cases which are very mild, and unconnected with phthisis





inflammation, or dyspnoea, and, in which the disease appears to  
 exist chiefly, in the paragon of coughing, little medical  
 assist<sup>n</sup> indeed, is requisite. Emulsion should be devoted,  
 or the occasional use of castor oil, or rhubarb. Small doses of  
 salinical wine, or, what is better perhaps, the Comp. Symp. of  
 pills, may also be employed to facilitate expectoration, occa-  
 sionally (especially in very young infants) increasing the dose  
 as rules to produce vomiting. (Antispasmodic as opipolado,  
 the function of trust, are useful to allay the cough, and,  
 sometimes, will speedily arrest the progress of the disease.  
 These means together with attention to diet, and taking  
 care to guard against the effects of cold, in order to pre-  
 vent the breaking up of inflammation will, commonly, be  
 all-sufficient.

But, should the attack, from the commencement, be of  
 a more violent character or should it become so during  
 its progress, it will be highly necessary for the welfare  
 of the patient that a greater share of attention should  
 be paid to the disease, and its violence combatted by

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In treating the disease under these circumstances the first indication evidently is to moderate the action of the disease, and palliate the urgent symptoms: and, for this purpose, the evacuating remedies are undoubtedly to be employed.

In all such cases, attended with much febrile excitement, with a full hard pulse, and great difficulty of breathing, &c, if there be symptoms of pneumonia inflammation, venous blood letting is indispensable particularly in those of full plethoric habits. The quantity to be drawn is to be proportioned

to the state of the patient and the severity of the symptoms, and some useful hints are contained in the first lecture on the subject, should be repeated.

There here it will also be attended by extracting blood locally from the chest by means of cups or leeches; and, in many cases, down the trachea an edge vessel, or some the portion of it, may lead to general bleeding may be entirely dispensed with and, if great depletion alone considered in.

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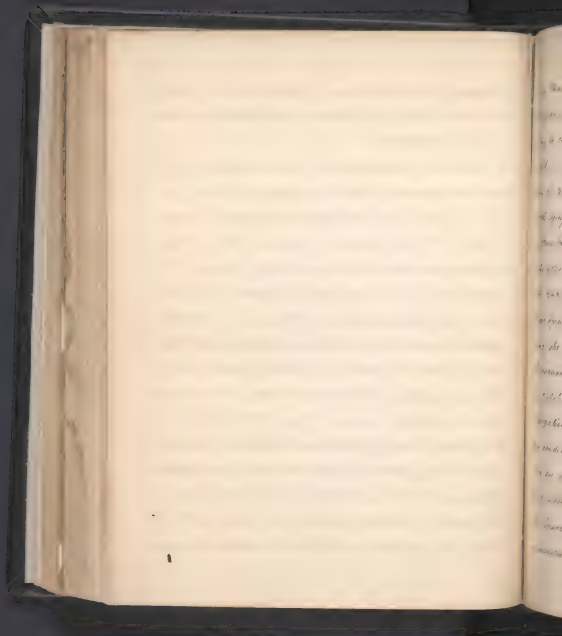
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a desired form there we may be inferred, from what is said  
in relation to this by Dr Chapman, in his lecture on matrine  
medica and Therapeutics.

If the various remedies, says he, that at different periods  
have been suggested for the cure of post-partum haemorrhage  
have been suggested for the cure of post-partum haemorrhage  
I have derived better effects than from  
any other. The nature of the remedy they are chiefly  
applicable and when the effect is instant they must be re-  
peated daily or even twice a day, in a weak or in a  
strong. By steady continuance in the cure and with the  
utero-tonic means resorted to the cure we shall generally be  
able to conduct the case to a comparatively speedy and suc-  
cessful issue, provided it be that of a child in the womb  
not so well adapted to person in men necessary life.

If the class of remedies the tartarized antimony is generally  
employed, being preferred as well on account of its superior  
efficacy as from the greater facility with which it may be  
administered to children, than most other articles of the class.  
It may be given either in the form of tartarized wine,



in that of watery solution. Of the time a child within the year may take ten, fifteen, or twenty drops, or more, according to circumstances, at short intervals, until vomiting is excited. The watery solution may be prescribed in the proportion of 3 grains of the Antimony, to ounces of water with little Syrup. Of this, a large teaspoonful may be given every fifteen minutes, to a child of one or two years old, until it take effect.

The comp. Syrup of Squills, or, as it is now commonly called, the "rose Syrup" is also an invaluable article, to produce vomiting, the dose should be large and frequently repeated, occasionally, Sulphate of Zinc, and other articles, may likewise be substituted, to produce vomiting.

Purgative medicines are also demanded on account of the condition of the bowels which commonly attends the disease, they are also serviceable, by relieving those determinations to the head which so frequently exist.

The bowels should be evacuated, every two or three days, by the administration of a mild laxative. A child of a year old

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may take 2 or 3 grains of calomel in combination with a small  
portion of opium or other ant; and if the bowels be not suf-  
ficiently opened by this, the operation may be assisted by a  
little castor oil. Rubust steam, or an infusion of senega  
may also be employed with advantage to keep the bowels in  
a soluble condition.

As the Hæmorrhage, and other evacuating remedies of the difficulty  
of breathing, and sense of oppression, still remain undisturbed,  
the application of a blister to the chest will be attended with  
needed advantage.

Expectorant medicines of various kinds are sometimes of  
great benefit as pectoranthes, balsamic wine, syrup of  
coughs &c; in small dose, frequently repeated.

The expansion of the mind, & sleep will also be facilitated,  
by the inhalation of various vapours; as of warm water &  
vinegar or other &c. The lar vapour is also an.

After the violence of the disease has been moderated and  
the inflammatory operation have been subdued by the va-  
rious remedies employed for that purpose, relief of an

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entirely different character are to be resorted to, with a view of arresting the progress of the disease.

The fixed alkalies are much employed. They are prescribed in doses of 2 or 3 grains, with a few drops of juice of Speerquawba and one drop of Tincture of Turpentine (see c. Some times a day to a child of a year old.

Nearly all the articles of the class of Narcotics, are taken and prescribed at different times, and after the subsidence of the more violent symptoms they may be useful by allaying the morbid sensibility of the affected parts, and thereby putting a stop to the disease.

When perhaps opium will be found, in common, the most simple: the best mode of prescribing it is in watery solution. Scutellaria is said by Dr. Pearson, in his treatise on cholera, to be of most decided efficacy; his mode of prescribing it is in the form of saturated tincture, of which, he says a child of a year old may safely take 6 drops, at intervals of six hours; the dose to be increased, one drop every day, untill a diuretic effect is produced, or until

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its effect on the pulse demands it just now.

Henlock, Prussic acid, Belladonna Stramonium &c are  
all frequently administered with the same view and  
not without occasional benefit.

Advantage is likewise to be obtained from the em-  
ployment of Antispasmodics, as Opiporanda, Musciv:  
Sometimes, the disease appears to be prolonged mainly  
by the force of habit, and in this case, to break up  
the train of morbid associations, and restore the men-  
tal functions of the system, the peruvian bark and  
other Tonic appear to be peculiarly appropriate, but  
particular care should be taken that these articles be  
not employed, while there is the slightest evidence of  
inflammation, or their administration will be decidedly  
injurious.

Not a small proportion of pain is referred on the  
internal use of Cantharides, at this period of the dis-  
ease. It is commonly prescribed in Liniment, with  
a little Laudanum; commencing with small doses

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and gradually increasing them untill strangury is induced; on the occurrence of which, the progress of the disease is frequently arrested.

Stimulating articles, as spirits of turpentine, tincture of cantharide, juice of garlic, &c rubbed along the spine, and applied to the soles of the feet, sometime have a good effect.

A change of residence will sometimes perform a cure, after all other means have failed.

Strict attention to diet is highly necessary throughout the whole course of the disease, and the success of the treatment will depend in a great measure, on the degree of exactness with which the directions in this respect are performed: it should consist of light and unstimulating articles in the first stage, but, after the force of the attack is spent, those of a more nutritive character are to be employed.

Convulsions sometime occur during the paroxysms; they are to be relieved by the use of the warm bath, the

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application of leeches to the temples, passing &c. —

Hydrothorax, Hydrocephalus, mania, and the various  
sequela of the disease, require peculiar form of treat-  
ment, of which nothing is to be said here, as the dis-  
-ease is of a nature, unconnected with this discussio.

